
A mystery lychee-related illness is solved

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For 20 years, an area in eastern India was the site of a mysterious, sudden-onset, neurological illness that affected apparently healthy young children, resulting in seizures, comas and (in 40 percent of cases) death. This pattern occurred starting in mid-May, and ended in July with the arrival of monsoon rains.

The cause of the illness—extremely low blood sugar resulting from consumption of lychees (*Litchi chinensis*) on an empty stomach—was identified by India’s National Center for Disease Control and the India office of the Centers for Disease Control and Prevention in Atlanta. A recent article in *The Lancet* ([http://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(17\)30035-9/fulltext?rss=yes](http://www.thelancet.com/journals/langlo/article/PIIS2214-109X(17)30035-9/fulltext?rss=yes)) describes the investigation and the conclusions reached by researchers.

Most of the children admitted to the hospital had normal white blood cell counts and no evidence of infection. No evidence of pesticide toxicity was found. Most of the children had low blood sugar levels. A similar symptom is associated with unripe ackee fruit (*Blighia sapida*), which contains a toxin called hypoglycin that disrupts fatty acid metabolism and leads to low blood glucose levels. Children affected by the illness had abnormal levels of hypoglycin in their urine, but it was from lychees rather than ackee fruit; the area affected by the mystery illness has numerous lychee orchards. Lychees have been found to contain hypoglycin (and another similar toxin abbreviated as MCPG), with unripe fruits containing more of the compounds than ripe fruit.

The *Lancet* article demonstrated an association between the neurological illness and the consumption of lychees on an empty stomach (i.e., the two were related).

But the research also makes a case for causality (that is, that the consumption of lychees on an empty stomach resulted in the neurological illness). Based on the results, the authors of the article recommend that 1) young children are encouraged to always eat an evening meal; 2) consumption of lychees by young children is limited; and 3) in cases of sudden-onset neurological illness, low blood sugar be checked for and addressed.

Prior to reading this article, we had not heard of potential negative effects from eating large quantities of lychees at the exclusion of other foods. This situation underscores the importance of eating a diverse diet. Do not be overly alarmed by this research. ECHO staff member Rick Burnette commented, “Despite having lived and worked in lychee-land [Thailand] for years, this was the first time I had heard of such cases.”

